

Susquehanna River Basin Commission *Information Sheet*

Managing the Susquehanna Basin's Water Resources During Droughts



How often do droughts occur in the Susquehanna River Basin?

Like floods, the magnitude of drought events can be categorized based on historical frequency, i.e., 5-year droughts, 10-year droughts, 50-year droughts, etc. (The higher numbers indicate more severe, and less frequent, droughts.) Droughts can affect the entire basin or cause localized water shortages.

Since the beginning of the 1900s, the basin has experienced droughts in every decade except the 1970s. The worst droughts occurred in 1930, 1939 and 1964. During the 1990s through mid-2000s, periodic low flows throughout the basin or in regions resulted in frequent droughts, including in 1991, 1995, 1997, 1998, 1999, 2000, 2002 and 2006.

How does SRBC determine if drought conditions exist?

The Susquehanna River Basin Commission (SRBC) looks at five major indicators in deciding whether to make a drought declaration:

1. precipitation deficits;
2. streamflow levels;
3. groundwater levels;
4. soil moisture index; and
5. reservoir levels.

SRBC carefully monitors and evaluates data coming from the National Weather Service, the U.S. Geological Survey and reservoir owners. The data are compared to statistical information to determine if current conditions are at, above or below normal for a particular season. Tracking this information helps verify if drought conditions are further declining or improving.



A water supply reservoir in central Pennsylvania impacted by drought.

What are the stages to a drought declaration?

There are three stages to a drought declaration: drought watch; drought warning; and drought emergency. SRBC, along with its drought management committee, determines each stage based on the status of the five drought indicators and, in part, on known water purveyor and local water shortages. A declaration may be basinwide, regional or localized by counties, based on the degree to which various portions of the basin are affected.

What are the stages to a drought declaration? *(continued)*

Drought Watch

The purpose of this first stage is to alert water suppliers, industries and commercial and residential water users of the potential for future drought-related problems. SRBC's drought watch calls for increased monitoring, awareness and voluntary water conservation to reduce water uses by 5 to 10 percent in the affected areas. Water suppliers and industrial users also are asked to update and begin to implement their individual drought contingency plans.

Drought Warning

During this phase, SRBC initiates stronger voluntary cutbacks of 10 to 15 percent to help:

- avoid or reduce water shortages;
- relieve stressed sources; and
- ready contingency supplies.

If successful, voluntary conservation can prevent the need for mandatory restrictions. A drought warning indicates that drought conditions and potential water shortages are imminent, and a coordinated response is critical.

Drought Emergency

During this, the most serious drought stage, SRBC acts to protect remaining water supplies. All available water resources are used to respond to actual emergency conditions, avoid depleting water sources, protect public health and safety and support essential and high priority water uses. SRBC may do the following:

1. Reduce diversions and water allocations to resolve conflicts among competing users of the basin waters;
2. Coordinate reservoir operations as needed to protect public health, safety, welfare and the environment;
3. Request its member states to institute mandatory restrictions on non-essential water uses; and
4. Take other actions as deemed appropriate.

What are voluntary water conservation measures?

Drought watches and warnings call for voluntary water conservation measures. Voluntary water use cutbacks of 10 to 15 percent during peak hours can have significant benefits if followed by everyone.

Tips for Residential Water Users

- Don't water lawns, unless just newly seeded. Grass often goes dormant and brown—not dead—under drought conditions.
- Limit vehicle washing. Use of a bucket and/or hose with automatic shutoff is recommended.
- Sweep sidewalks and driveways, rather than washing them.
- Take short showers instead of baths.
- Run washing machines and dishwashers only when filled to capacity.
- Repair leaking and dripping faucets immediately.
- Install water saving devices in the home, such as low flow toilets and flow restrictors on showerheads.
- Select more drought-tolerant vegetation and plant species for landscaping, and use mulches to retain moisture.

Tips for Industrial/Commercial Facilities

- Inspect plumbing fixtures for leaks and repair faulty piping.
- Install water-conserving devices and update outdated plumbing fixtures.

Tips for Industrial/Commercial Facilities (continued)

- Implement a water re-use program, if one is not already in place.
- Don't water lawns or landscaped areas unless newly planted.
- Turn off fountains.

Tips for Businesses Using Irrigation Systems

- Reduce the level of irrigation and/or restrict watering times to the coolest times of the day and when it is not windy, to reduce water loss through evaporation.
- Inspect irrigation equipment for leaks and repair all faulty piping.

What makes SRBC "uniquely" qualified to manage the basin's water resources, including during times of drought?

Among other reasons, SRBC is the only agency in the basin that:

- Can require uniform drought restrictions among states and avoid political inequities.
- Can assume jurisdiction on interstate matters involving the Susquehanna River or its tributaries. This provision is particularly helpful to downstream users. (Although New York is the basin's northern most state, it is both an upstream and downstream state.)
- Is specifically authorized to review and approve water diversions into and out of the basin.
- Regulates consumptive water use to avoid conflicts between instream and offstream water users.
- Can allocate basin waters among SRBC's member states.

